

ABT Contract

Contract No. 04-45606

CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT, entered into this 17th day of September 2003, between the **INTERMOUNTAIN POWER SERVICE CORPORATION (IPSC)**, a nonprofit organization under contract to the Intermountain Power Agency (IPA), a political subdivision of the state of Utah, organized and existing under the Interlocal Co-Operation Act, Title 11, Chapter 13, Utah Code Annotated 1953, as amended, and **Advanced Burner Technologies (ABT)**, a Corporation, with its principal office in Bedminster, New Jersey, hereinafter called the (Contractor),

WHEREAS, IPSC has prepared specifications and other Contract Documents for **Unit 2 Low NOx Burners** as detailed in the Contract Documents (the Work), and has requested proposals from bidders to perform the Work;

WHEREAS, Contractor has submitted to IPSC a Proposal in accordance with the terms of this Contract Agreement; and

WHEREAS, IPSC has determined and declared Contractor to be the lowest and best, regular responsible bidder for the said Work, subject to execution of this Contract Agreement;

AGREEMENTS: In consideration of the compensation to be paid to Contractor, and of the mutual terms and conditions contained herein, IPSC for itself and its successors, and Contractor for itself and its permitted successors and assigns, hereby agree as follows:

ARTICLE I: Contractor shall perform in accordance with the provisions of this Contract Agreement, including the Contract Documents identified in Article III hereof.

ARTICLE II: Contractor will be paid for its performance under this Contract Agreement in accordance with the provisions of the Contract Documents, including those provisions in the Article entitled "Limitation of Liability; Responsible Party" in Part E, Division E1, General Conditions.

Low NO_x Burners

ARTICLE III: The term Contract Documents means and includes all of the following:

<u>PART</u>	<u>DIVISION</u>	<u>TITLE</u>
A	A1	Notice Inviting Proposals
B	B1	Instructions to Bidder
	B2	Supplementary Instructions to Bidders
C		<u>Bidding Documents</u>
	C1	Proposal, No. Q03013
	C1	Labor, Material, and Performance Bond
	C2	Proposal Schedule
	C3	Additional Bid Information
	C4	Comments, Exceptions, Additions, and Cost Summary
	C5	Contractor's Exceptions
D	D1	Contract Documents Description
E	E1	General Conditions
	E2	Additional General Conditions
F		<u>Detailed Specifications</u>
	F1	Special Conditions
	F2	Detailed Requirements

Attachments

Attachment 1 - Scanner, Lighter and Fuel Specifications, and Outline Drawings
Attachment 2 - Fuel Oil Analysis Report
Attachment 3 - General Coal Properties
Attachment 4 - FD Fan Performance
Attachment 5 - PA Fan Performance
Attachment 6 - Existing Burner General Layout
Attachment 7 - Secondary Air Duct and Windbox Drawings
Attachment 8 - As Fired Coal Sample Analyses - IPSC Fuels Lab

Contract No. 04-45606

The foregoing Contract Documents, and the documents identified in Part D "Contract Documents Description," are an integral part of this Contract Agreement and are hereby incorporated as part of this Contract Agreement as if fully restated herein. The above listed Contract Documents shall prevail over other information submitted with Contractor's Proposal.

ARTICLE IV: This Contract Agreement, including the Contract Documents, constitutes the entire Agreement of the parties hereto with respect to the Work and other subjects addressed herein, and supersedes all prior oral communications or written documents.

WHEREFORE, IPSC and Contractor execute this Contract Agreement as of the date stated in the first introductory paragraph.

INTERMOUNTAIN POWER SERVICE CORPORATION

850 West Brush Wellman Road
Delta, UT 84624-9546

By: _____
George W. Cross
President and Chief Operations Officer

_____ Date

ADVANCED BURNER TECHNOLOGIES

350 Main Street, Suite 5
Bedminster, NJ 07921

By: _____

_____ Date

Title: _____

LIST OF SUGGESTED BIDDERS

Abe Baltazar
Babcock and Wilcox
3535 South Platted River Drive, Unit G-3
Sheridan, CO 80110
Telephone: (303) 761-3388
email: adbaltazar@babcock.com

Joel Vatsky
Advanced Burner Technologies
350 Main Street, Suite 5
Bedminster, New Jersey 07921
Telephone: (423) 899-8918
Telephone: (888) 228-0907

Larry Boucher
Babcock Power Inc.
5 Neponset Street
PO Box 15040
Worcester, MA 01615-0040
Telephone: (508) 854-3784
email: lboucher@bbpwr.com

David Moyeda
GE Energy and Environmental Research Corporation
18 Mason
Irvine, CA 92618
Telephone: (949) 859-8851
email: david.moyeda@ps.ge.com

James J. Utt
Foster Wheeler
410 Unita Road
Manitou Springs, CO 80829
Telephone: (719) 685-1986
Fax: (719) 685-1991

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PART A - DIVISION A1

NOTICE INVITING PROPOSALS

The Intermountain Power Service Corporation (IPSC) invites sealed bids for furnishing and delivering **Unit 2 Low NOx Burners** in accordance with **Specifications 45606**, available in the Purchasing Section, Intermountain Power Service Corporation, 850 West Brush Wellman Road, Delta, Utah 84624-9546.

Proposals shall be submitted on IPSC's bidding forms. All Proposals shall be filed with the Buyer at the above address on or before **August 25, 2003**.

Each Proposal shall be accompanied by a certified or cashier's check payable to Intermountain Power Agency (IPA), or a Surety Bond payable to IPA, IPSC, and the City of Los Angeles Department of Water and Power (LADWP) in the amount of \$50,000 as a guarantee that the bidder shall execute the proposed Contract Agreement if awarded.

Proposals shall be subject to acceptance within, and irrevocable for, a period of one hundred and twenty (120) calendar days after date of bid opening.

IPSC reserves the right to reject any and all Proposals.

Contractor shall furnish a Performance Bond equal to 10 percent of the estimated Contract amount, and shall keep the Performance Bond in place at all times thereafter until all obligations under the Contract have been discharged.

In the performance of any contract awarded, the bidder shall not discriminate in employment practices against any employee or applicant for employment because of race, religion, national origin, ancestry, sex, age, or physical disability.

Dated: _____

Nancy C. Bennett, Buyer
Intermountain Power Service Corporation

PART B - DIVISION B1

INSTRUCTIONS TO BIDDERS

1. **Form, Signature, and Delivery of the Proposals:** The bidder's Proposal shall be made on the yellow copy of the Bidding Documents. The Specifications printed on white paper shall be retained by the bidder.

The bidder's name, address, and the date shall be stated in the Proposal. The Proposal shall be signed by the person authorized to bind the bidder.

The Proposal shall be enclosed in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the bidder. The envelope shall bear the words "Proposal for," followed by the Specification Number, the title of the Specifications, and the date and hour of bid opening.

If the Proposal is mailed, it shall be addressed as follows:

Purchasing Section
Intermountain Power Service Corporation
850 West Brush Wellman Road
Delta, UT 84624-9546

If the Proposal is sent by messenger, it shall be delivered to the Administration Building, Intermountain Power Service Corporation, 850 West Brush Wellman Road, Delta, Utah.

2. **Interpretations and Addenda:** Should a bidder find discrepancies or omissions in the plans, specifications, or other documents, or should there be doubt as to their true meaning, the bidder shall submit to the Buyer a written request for an interpretation or clarification thereof. A request for addenda, interpretation, or clarification shall be delivered to the Buyer marked "Request for Interpretation" and must be received by the Buyer in time to permit a reasonable response before the date of opening bids. Any interpretation of, or change in the documents will be made only by addendum issued to each person to whom Specifications have been issued and will become a part of any contract awarded. IPSC will not be responsible for or bound by any other explanations or interpretations.
3. **Correspondence:** All inquiries or correspondence to IPSC prior to award of Contract shall be addressed to the Buyer.
4. **Changes or Alternatives:** The bidder shall not change any wording in the documents. Any explanations or alternatives offered shall be submitted in a letter attached to the front of the Bidding Documents. Alternatives which do not substantially comply with IPSC's Specifications cannot be considered. Language of negation or limitation of any rights, remedies, or warranties provided by law will not be considered part of the Proposal. Bids offered subject to conditions or limitations may be rejected.

DIVISION B1

INSTRUCTIONS TO BIDDERS

5. Specified Materials or Equivalent: Whenever any particular material or process is specified by a patent or proprietary name, by a trade or brand name, of a manufacturer, such wording is used for the purpose of describing the material or process, fixing the standard of quality required, and shall be deemed to be followed by the words "or equivalent." The bidder may offer any material or process which shall be the equivalent of that so specified, but the bidder must identify the equivalent offered.
6. Language: Everything submitted by the bidder shall be written in the English language.
7. Sales or Use Taxes: Prices quoted by the bidder shall not include any applicable sales or use taxes or Federal Excise Taxes.
8. Duties: Prices quoted by the bidder shall include all applicable duties.
9. Award of Contract: Award of Contract will be made to the lowest and best, regular responsible bidder. The determination as to which is the lowest and best, regular responsible bidder may be made on the basis of the lowest ultimate cost of the services, materials, equipment, or other Work in place and use. The right is reserved to reject any or all Proposals.

Within thirty (30) calendar days after the date of award of Contract, Contractor shall sign the Contract supplied by IPSC. The Contract will be effective upon execution by IPSC. Award of Contract is subject to execution of IPSC's form of Contract Agreement and other Contract Documents.

10. Comparison of Bids: For the purpose of comparing bids, it will be assumed that the quantity of forty-eight (48) burners and scanners will be required.
11. Bidder's Bond: The Proposal shall be accompanied by a certified check or a cashier's check issued by a responsible bank, payable in the state of Utah to the order of Intermountain Power Agency, in an amount of \$50,000. A surety bond payable to IPA, IPSC, and LADWP in a like amount will be accepted in lieu of a check.
12. Performance Bond: Within thirty (30) calendar days after date of award of Contract, Contractor shall furnish a Performance Bond, payable to IPA, IPSC, and LADWP equal to 10 percent of the estimated amount of the Contract.
13. Calculation of the Bonds: The estimated amount of the Proposal for the Bidder's Bond, or of the Contract for the Performance Bond, will be considered to be the price, including freight charges, quoted by the bidder in the Proposal Schedule, times the assumed quantity under the Comparison of Bids in Article 10 of this Division.

PART B - DIVISION B2

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

1. **Required Delivery and Installation Schedule:** The Unit 2 outage is currently scheduled to begin Saturday, February 28, 2004. The target completion date for returning all systems to IPSC Operations control is Wednesday, March 24, 2004. Each bidder shall prepare and provide, with each bid package, a proposed installation plan showing project progress on a daily basis beginning with initial equipment delivery and ending with job site clean up and exit.
 - a. All bidders shall provide a guaranteed installation schedule as part of the proposed installation plan submitted with each bid package.
 - b. The proposed installation plan shall be developed to ensure completion of all Work inside the boiler within a maximum of twenty-six (26) days. This twenty-six (26) day period shall include four (4) days for installation of the boiler internal scaffolding by a separate contractor and three (3) days for removal of the same.
 - c. Work not requiring the unit to be off-line, such as mobilization, staging, boiler enclosure structural access work, demobilization, etc., shall be clearly identified on the proposed installation plan and can be coordinated outside this outage window, with approval from the IPSC Contract Administrator. Mobilization into the burner levels of the boiler enclosure, as well as material and equipment access and removal will require careful coordination due to the volume of work ongoing throughout the boiler. Crane access will require close coordination.
 - d. The bidders shall provide a schedule of costs associated with an IPSC scheduled delay of the outage start date in one (1) week increments up to one (1) month. These costs shall be based on notification from IPSC one (1) month prior to the scheduled outage start dates. A second schedule of costs shall be based on notification from IPSC one (1) week prior to the scheduled outage start dates.
 - e. Unless otherwise noted in these Specifications, IPSC facilities and equipment shall not be used in support of this Work. To prevent delays, caused by equipment breakdown, Contractor shall provide spare tools and equipment at IPP job site in reasonable quantities in anticipation of equipment failures.
 - f. The proposed installation plan, submitted with the bid package, shall be the basis for development of the approved installation plan forming a part of the eventual Contract governing this Work. The approved installation plan shall be used as the basis for instituting mid-outage resource corrections and for calculating any liquidated damage charges associated with completion of the Scope of Work.

DIVISION B2

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

- g. The proposed installation plan shall include detailed information regarding each task within the Contract Scope of Work, including:

DETAILED INFORMATION FOR PROPOSED INSTALLATION PLAN
Equipment and Material Delivery
Equipment Mobilization and Assembly
Manpower Loading Throughout Contract
Windbox Access Provisions Complete
Burner Removal By Row
Interface Modifications Complete (If Any)
Burners in Position
Burners Welded Out
Burner Flow and Temperature Instrumentation Complete
Windbox Restoration Complete
External Instrumentation Boxes Mounted, Wired, and Tubed
Windbox Insulation Complete
Material and Equipment Removed From Boiler and Stowed
Area Cleaned and Restored

- h. The proposed installation plan, to be included as part of the submitted bid, shall include estimates of all required on-site services, with clear identification of each request for service to be provided by IPSC. The estimates shall include power service requirements for running all electrical equipment and compressed air requirements. Authorization for connection to and use of requested power, compressed air, or other on-site services must be coordinated and approved by the IPSC Contract Administrator.
- i. At least two (2) months prior to mobilization to IPP plant site, Contractor shall provide a detailed material "laydown plan" for coordination of area utilization and access. The laydown plan shall address staging and temporary storage requirements for all associated materials and equipment in order to minimize interference with ongoing plant operations and outage Work.

DIVISION B2

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

This laydown plan shall be submitted to and approved by the IPSC Contract Administrator prior to receiving any Contract materials, equipment, or craft personnel on site for the outage Work.

2. Incentives and Liquidation Damage: For incomplete delivery to the IPP job site by 12:00 pm, noon, Mountain Standard Time (MST) on Monday, February 23, 2004, Contractor shall be assessed 1 percent in liquidated damages calculated as a percent of the Contract price.

ABT anticipates shipments to the IPP job site will begin in early January, prior to installation contractor arrival on site. In case of early shipments, IPSC will be responsible for off loading and storage of equipment.

For delivery of all burner and scanner components to the IPP job site at least three (3) weeks ahead of the Unit 2 outage start date identified above, the bidder will be awarded a 1 percent bonus calculated as a percent of the Contract price.

3. Applicable Codes and Standards: The Work performed within these Specifications shall adhere to the applicable portions of the latest published revision of the following codes and standards:

CODES AND STANDARDS	
ASME - American Society of Mechanical Engineers	
NBIC - National Board Inspection Code	
AWS - American Welding Society	
OSHA - Occupational Safety and Health Administration	
ASNT - American Society for Nondestructive Testing	
Contractor's Utah Jurisdiction Approved R Stamp Program	

4. Safety: Contractor shall be responsible to provide and manage an acceptable safety program.
- a. Contractor shall provide a full-time safety representative. The safety representative shall act as the point of contact for all safety-related issues and may be assigned additional duties.
 - b. Contractor shall provide copies of written safety policies/plans to the IPSC Contract Administrator one (1) month prior to beginning Work, including, but not

DIVISION B2

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

limited to, Respiratory Protection, Confined Space, and Hazardous Communications.

- c. Prior to flame cutting or welding in any location, Contractor shall first obtain a Hot Work Permit. The permit will be coordinated by the IPSC Contract Administrator or designee. The permit lists mandatory safety precautions, which shall be taken before, during, and after hot work.
 - d. Contractor shall ensure its employees perform Work in accordance with all applicable federal, state, and local safety and health regulations. The IPSC Safety Section personnel will periodically monitor the Work site. If violations are noted, the violations will be reported to Contractor's on-site supervisor and the IPSC Contract Administrator for appropriate action.
5. Flame Scanning System Training: The bidder shall include provisions for two (2) on-site training classes for a duration of not less than one (1) ten-hour day each. Classes shall be conducted with training sets of the installed hardware to allow for full simulation of the calibration, tuning, diagnostics, and repair procedures. Classes shall be conducted for up to thirty (30) people per class.
6. Documentation: Nine (9) copies of all hard-copy documentation shall be supplied for all equipment supplied under the Contract. Where possible, electronic documentation may be provided, in addition to or in lieu of, hard-copy documentation. Electronic documents shall be text .pdf, picture .jpg, or vector .dwg files.

Documentation provided by Contractor shall include, but not be limited to, the following as applicable:

DOCUMENTATION
Equipment Description
Dimensional Drawings
Installation Instructions
Operating Instructions
Maintenance and Trouble-Shooting Guidelines
Parts List and Bill of Materials
Recommended Spare Parts

PART C - DIVISION C1

BIDDING DOCUMENTS

BIDDER'S BOND

(Not necessary when certified or cashier's check accompanies bid. See below*.)

SURETY BOND

We, the undersigned Principal and Surety, acknowledge ourselves jointly and severally bound to Intermountain Power Agency (IPA) and Intermountain Power Service Corporation (IPSC) of the state of Utah, and the City of Los Angeles Department of Water and Power (LADWP), in the sum of _____ Dollars (\$_____), to be paid to IPA if the attached Proposal shall be accepted and the proposed Contract awarded to said bidder, and said bidder shall fail to execute the Contract and Bond for the faithful performance thereof; otherwise this obligation to be void.

Dated: _____, 20____

Firm Name: _____

By: _____
(Signature)**

(Surety): _____

By: _____
(Signature)

*When the bidder is submitting a check in lieu of a Bond, the check must be made payable to Intermountain Power Agency, must either be certified by a responsible bank or be a cashier's check issued by a responsible bank, and must be payable in the state of Utah.

If check is submitted herewith, state check number _____ and amount \$_____

**See Form, Signature, and Delivery of the Proposals, Division B1

NOTE: All signatures above must be written in ink.

PROPOSAL

The undersigned hereby proposes to furnish and deliver **Unit 2 Low NOx Burners** to the Intermountain Power Service Corporation in accordance with **Specifications 45606**.

The undersigned agrees, upon the acceptance of this Proposal: (a) to execute IPSC's form of Contract (including the Contract Agreement and other Contract Documents identified in said Specifications) for furnishing and delivering the items and services embraced in the accepted Proposal, (b) to perform its obligations under the Contract at the prices stated in the accompanying Proposal Schedule, and (c) to furnish a Performance Bond conditioned upon the faithful performance of the Contract.

The undersigned furthermore agrees that, in case of failure to execute such Contract Agreement and provide the necessary Performance Bond, the check or Bidder's Bond accompanying this Proposal, and the monies payable thereon, shall be forfeited to and remain the property of Intermountain Power Agency.

The undersigned declares under penalty of perjury that this Proposal is genuine, is not a sham or collusive, and is not made in the interest or in behalf of any person or entity not herein named. The undersigned further declares under penalty of perjury that the bidder has not directly or indirectly induced or solicited any other bidder to submit a sham bid, or any other person, firm, or corporation to refrain from bidding. The undersigned also declares under penalty of perjury that the bidder has not in any manner sought by collusion to secure for itself an advantage over any other bidder.

I declare under penalty of perjury under the laws of the state of Utah that the foregoing is true and correct.

Date: _____, 20____

Bidder: _____

Address: _____

Signed By: _____
(Authorized Signature)

Print Name: _____

Title: _____

Spec. 45606

Contract No. 04-45606

Bond No. _____

LABOR, MATERIAL, AND PERFORMANCE BOND

1. Know all persons by these presents, that

(Insert Contractor's name and address or legal title)

as Principal, hereinafter called Contractor, and

as Surety, hereinafter called Surety, are held and firmly bound unto Intermountain Power Agency, Intermountain Power Service Corporation, hereinafter called IPSC, and the City of Los Angeles Department of Water and Power, as Obligees, in the amount of _____ Dollars (\$_____) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

2. WHEREAS, Contractor has by written agreement dated _____, 20____, entered into a Contract Agreement with IPSC for **Unit 2 Low NOx Burners** in accordance with Contract No. **04-45606** which Contract is attached hereto and by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE,

3. THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, and shall promptly make payment to all claimants for labor and material used or supplied for use in the performance of the Contract, then this obligation shall be null and void; otherwise, it shall remain in full force and effect.
4. Whenever Contractor shall be, and declared by IPSC to be, in default under the Contract, IPSC having performed IPSC's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:
- a. Complete the Contract in accordance with its terms and conditions, or
 - b. Obtain a bid or bids for submission to IPSC for completing the Contract in accordance with its terms and conditions, and upon determination by IPSC and Surety of the lowest and best, regular responsible bidder acceptable to IPSC, arrange for a Contract between such bidder and IPSC, and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of Completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract price, but not exceeding the amount of the Bond. The term "balance of

the Contract price," as used in this paragraph, shall mean the total amount payable to Contractor under the Contract and any amendments thereto, less the amount previously paid to Contractor.

5. Upon failure of Contractor to timely pay laborers and material men, Surety agrees to discharge such obligation in an amount not exceeding the sum set forth above and also, in case suit is brought upon this Bond, a reasonable attorney's fee to be fixed by the court. This Bond shall inure to the benefit of any and all persons named in Title 14, Chapter 2, Utah Code, as amended, so as to give a right of action to such persons or their assigns in any suit brought upon this Bond.
6. No right of action shall accrue on this Bond to or for the use of any person or corporation other than named herein, or the heirs, executors, administrators, or successors and assigns of the Obligees, except as provided by statutory or regulatory provisions relating to Contractor's bonds upon public and private contracts, the provisions of which are made a part hereof as a supplemental description of Surety's obligations herein.
7. Surety hereby waives notice of any change orders or extensions of time made by IPSC in accordance with the terms of the Contract.
8. SIGNED AND SEALED this _____ day of _____, 20_____ AD

In the presence of: _____
(Principal)

(Seal)

(Witness)

(Title)

(Seal)

(Surety)

(Witness)

(Title)

PART C- DIVISION C2**BIDDING DOCUMENTS - PROPOSAL SCHEDULE**

1. Proposal is hereby made to furnish and deliver to IPSC **Unit 2 Low NOx Burners**, F.O.B. IPSC dock, full freight allowed in accordance with **Specifications 45606**, the following:
 - a. **Burner and Scanner Performance:** The new burners shall provide for a continuous boiler operation of 6,900,000 pounds/hour output, 1005°F superheat and 1005°F reheat temperature under all operating conditions. Bidders shall state the following burner and scanner performance guarantees and submit with the bid package:

BURNER AND SCANNER PERFORMANCE GUARANTEES	
Maximum Burner Nox and CO Production Under All Modes of Operation:	_____
Maximum Burner BTU Throughput:	_____
Burner and Scanner System Temperature Tolerance and Thermal Degradation Life:	_____
Time Within Which Burner Register Assembly Shall Remain Fully Operable By Hand:	_____
Combustion Zone Stability (Ignition Location/Stability, Flame Shape/Color):	_____
Ash Deposition (At Burner Throat, OFA Ports, and Superheat Pendants:	_____
Maximum Burner Out-Of-Service Cooling Air Requirements (CFM Per Compartment):	_____
Minimum In-Service Air Flow With Associated Emissions (Assuming 10 Percent Total Overfire Air Flow):	_____
Maximum In-Service Air Flow With Associated Emissions (Assuming 10 Percent Total Overfire Air Flow):	_____
Maximum Wear Life of Primary Air/Coal Path Components (Minimum Four (4) Years):	_____

DIVISION C2

BIDDING DOCUMENTS - PROPOSAL SCHEDULE

- b. In support of the stated guarantees, the bidder shall provide clear commitments in the following areas:

CLEAR COMMITMENTS	
The Nature of Remedial Efforts That Will Occur to Achieve Guaranteed Performance in Each Area	
The Approximate or Typical Time Frame Associated with Resolution of Each of the Stated Performance Guarantees	
The Company or Organization Expected to Provide the Applicable Resources Associated with the Remedial Work (Modifications, Testing, and Operational)	
The Ultimate Monetary Compensation Offered by the Original Equipment Manufacturer (OEM)	

2. Prices: The price or prices shall be according to the following bid pricing sheet:

BID PRICING SHEET	
Bid Price to Purchase Forty-Eight (48) Low NOx Burners, Per Specifications, Without Scanners:	\$ _____
Bid Price to Purchase Forty-Eight (48) Scanners and Ancillary Hardware, Per Specifications:	\$ _____
Bid Price to Install Forty-Eight (48) Burners and Associated Flame Detection Systems:	\$ _____
TOTAL BID PRICE:	\$ _____

3. Cash Terms: A discount for prompt payment is offered of _____ percent for Contract payments made within _____ calendar days after date of acceptance or delivery and receipt of invoice.
4. Taxes: The foregoing quoted prices are exclusive of all applicable sales and use taxes.
5. Manufacturer: _____
6. Location of Point of Manufacture: _____

DIVISION C2

BIDDING DOCUMENTS - PROPOSAL SCHEDULE

7. Brand and Catalog Number or Other Designation: _____

8. Form of Business Organization: The bidder shall state below the form of its business organization.

9. Bidder is a: _____, organized under the laws of the state of _____.
(Corporation, Partnership, Limited Partnership, Individual)

If a partnership, the bidder shall state below the names of the partners. If a corporation, the bidder shall state below the names of the president and of the secretary.

10. Person to Contact: Should IPSC desire information concerning this Proposal, please contact:

Name: _____ Telephone No: _____

Address: _____

(If different, the address of bidder's chief executive office is:) _____

PART C - DIVISION C3**BIDDING DOCUMENTS - ADDITIONAL BID INFORMATION**

1. **Bid Submittal Requirements:** Information supplied in submittals shall include, but not be limited to, the following:
 - a. Schedule showing the cost of replacement parts for both the burner components and the flame detection system, including a pricing index for calculating cost of individual replacement parts through the year 2010.
 - b. A recommended spare parts list with current pricing and normal delivery schedule.
 - c. Location, name, and telephone number of the nearest service technicians for both burners, burner instrumentation, and the flame detection systems.
 - d. Analysis of fail-safe modes of operation of the flame detection system, including component self-diagnostics and alarming.
 - e. Dimensional drawings as required for bid analysis and evaluation.
 - f. Burner and lighter materials of construction and applicable temperature tolerance.
 - g. Environmental limitations of burner and scanner hardware, including both airborne contaminants and heat.

The Proposal form in Part C, Division C2, Bidding Documents - Proposal Schedule, that was submitted with Proposal, listed the maximum and minimum limitations of offered equipment as being 2000°F and 140°F for the "Burner Tip" and "Scanner Electronic", respectively. The design for specific components is based on expected temperature exposure with the following limitations:

LIMITATIONS	
Component Description	Material Limitation, °F
Those exposed to direct furnace radiation, i.e., flow divider, spin vanes, throat casting, register front cone, fuel injector tip and flame stabilizers:	2000
Those semi-shielded from furnace radiation, i.e., fixed vane spinner and inner zone damper perforated plate:	1600

DIVISION C3

BIDDING DOCUMENTS - ADDITIONAL BID INFORMATION

LIMITATIONS	
Component Description	Material Limitation, °F
Those shielded from furnace radiation, set back from furnace opening, and exposed to maximum windbox temperature, i.e., register sleeve dampers, register backplate, windbox coverplate, fuel injector barrel, elbow flatback and fuel distributors:	750

Explanatory Comment: The reason for stating that there are no environmental limitations to the coal burners is that the stainless steel castings and plate facing the fire, ASTM 297 Gr HE or 309 will not deteriorate at temperatures of at least 2000°F. ABT has never measured tip temperatures above 1600°F, in pre-NSPS furnaces that have input per plan levels as high as 2.3MBTu/hr/ft² and Furnace Exit Gas Temperatures or 2400°F and firing Eastern bituminous coals. These are a good deal higher than Intermountain and generate higher gas temperatures.

Consequently, ABT does not consider operation of its design in IPSC's boiler to have any environmental limitations: The conditions are such that no material will operate anywhere near its limit. In fact, ABT has placed no such limitations on any retrofit ABT has done.

- h. Available and recommended modes of operation for both the flame detection system and the burner system.

ABT will not require any special modes of operation in that the existing burner controls should not require changes. Burners will be setup during optimization (at 100 percent MCR) which will begin with components at predetermined positions similar to the follow example:

PREDETERMINED POSITIONS	
Burner Secondary Air Sleeve Dampers (SAD):	80 Percent Open
Burner Outer Air Registers Spin Vanes:	40 Percent Open
Burner Inner Air Sleeve Damper:	20 Percent Open

Following start-up these components are used to control the shape and ignition point of the flame, which in turn controls NO_x, O₂ distribution and CO emissions. The final settings are tabulated and provided to the customer for future

reference. During normal operation, following optimization, further adjustments should not be necessary unless a significant change in fuel supply characteristics occurs.

In no case has ABT required any customer to modify normal procedures to accommodate its burners; however, as noted in the guarantee section, ABT does require good fuel balance in the coal pipes, accurate primary air flow measurement and control, and that the primary air flow decrease as mill load decreases. ABT does not consider these to be "special modes of operation"; rather good operation.

- i. Recommended maintenance requirements for the burners and flame detection system.
- j. Required boiler modifications for accommodation of the new hardware.
- k. Installation and performance history of the burners and flame detection system.
- l. Recommended spare parts for all hardware or software provided.
- m. Proposed installation plan, including recommended methods of installation for maximizing both installation productivity and operating reliability.

PART C - DIVISION C4**COMMENTS, EXCEPTIONS, ADDITIONS, AND COST SUMMARY**

The following is a list of comments, exceptions, additions, and cost summary to Specifications 45606 which shall be incorporated as part of the Contract Documents in Contract 04-45606.

1. Exception/Change: ABT Payment of Schedule:

ABT 5.2 PAYMENT SCHEDULE	
20 Percent	Burner material on order.
10 Percent	Upon Submittal of burner and flame detection system and general arrangement drawings.
30 Percent	Upon commencement of burner fabrication.
30 Percent	Upon receipt of all burners on the job site. (Note: Early shipment is acceptable with storage at IPP job site.)
10 Percent	Upon completion of start-up and adjustment of burners.

2. Addition: The following feature shall also be included:

ABT 3.1 OPTI-FLOW LOW NO_x BURNERS
Ratchet-type actuators are to be provided for moving the sleeve damper and spin vane ring. In addition, the dual-handle control features for both the damper and spin vane ring are to be retained.

3. Addition: IPSC selects the ABB scanner with noted exceptions (see Addition 4, below); include with that selection, Option 2 and Option 5.

ABT A2-2 ABB		
Option 2	Safe Flame Sensor Module Communication Server (SMCS)	Cost: \$10,000
Option 5	Safe Flame DFS (recommended spare parts)	Cost: \$11,288

DIVISION C4

COMMENTS, EXCEPTIONS, ADDITIONS, AND COST SUMMARY

4. Addition: The following will be provided for in the Contract:

ABT A2-2 ABB, Pages 1 and 2	
ABB has quoted sixteen (16) amplifier enclosures to be located at the burner with front-access chassis. IPSC requires location of the amplifiers and enclosures near the control room to minimize boiler washdown damage. IPSC requires the chassis to be rear-access with (2) cabinets of 24-inch depth containing eight (8) chassis, rather than the twenty-six (26) called-out. This will require increasing the cable runs from 50 feet to approximately 500 feet.	
IPSC intends to provide local-indication, at the burner, for a flame intensity value. IPSC will provide the instrumentation for this local-indication requirement.	

5. Cost Summary: The total cost of the Contract to supply burners and options is:

COST SUMMARY	
Item	Cost
Burners:	\$2,237,415
ABB Scanners:	\$ 212,515
Option 2 (SMCS):	\$ 10,000
Option 5 (Parts):	\$ 11,288
Performance Bond:	\$ 15,000
Professional Liability Premium:	\$ 60,000
Total Cost:	\$2,546,218

PART D - DIVISION D1

CONTRACT DOCUMENTS DESCRIPTION

The Contract Agreement, together with the documents listed in Article 3 thereof, the Reference Specifications, any other documents listed below, and such of Contractor's Proposal documents as are expressly agreed to by IPSC shall constitute the Contract (the Contract). Said Documents are complementary and require complete and finished Work. Anything shown or required of Contractor in any one or more of said documents shall be as binding as if contained in all of said documents. Contractor shall not be allowed to take advantage of any error, discrepancy, omission, or ambiguity in any document, but shall immediately report to the President and Chief Operations Officer, in writing, any such matter discovered. The President and Chief Operations Officer will then decide or correct the same and the decision will be final.

PART E - DIVISION E1

GENERAL CONDITIONS

1. **Definitions:** The following words shall have the following meanings:
 - a. **Bidder:** The person, firm, or corporation adopting and submitting a Proposal under these Specifications.
 - b. **Buyer:** The Purchasing Agent for IPSC.
 - c. **Contract Administrator:** The IPSC employee designated by the President and Chief Operations Officer with primary responsibility for administration of the Contract, or other representatives designated by the Contract Administrator acting within the limits of their authority.
 - d. **Contractor:** The person, firm, or corporation to whom the Contract is awarded.
 - e. **Directed, Required, Approved, etc.:** The words *directed, required, approved, permitted, ordered, designated, prescribed, instructed, acceptable, accepted, satisfactory*, or similar words shall refer to actions, expressions, and prerogatives of the Contract Administrator unless otherwise expressly stated.
 - f. **Gallon:** Liquid volume of 231 cubic inches at 60 degrees Fahrenheit.
 - g. **IGS:** Intermountain Generating Station located at 850 West Brush Wellman Road, Delta, Utah 84624.
 - h. **IPA:** Intermountain Power Agency, the owner of Intermountain Power Project, and a political subdivision of the state of Utah, organized and existing under the Interlocal Co-operation Act, Title 11, Chapter 13, Utah Code Annotated 1953, as amended.
 - i. **IPP:** Intermountain Power Project, consisting of Intermountain Generating Station, Intermountain Railcar, Intermountain Converter Station, Adelanto Converter Station, Intermountain AC Switchyard and associated transmission lines, microwave stations, and support facilities.
 - j. **IPSC:** Intermountain Power Service Corporation, a nonprofit corporation, furnishing personnel to support the Operating Agent in the performance of operation and maintenance.
 - k. **Operating Agent, or LADWP:** The City of Los Angeles Department of Water and Power which is responsible for operation and maintenance for IPP.

DIVISION E1

GENERAL CONDITIONS

- i. President and Chief Operations Officer: The President and Chief Operations Officer of IPSC, or other representatives designated by the President and Chief Operations Officer acting within the limits of their authority.
 - m. Reference Specifications: Those bulletins, standards, rules, methods of analysis or tests, codes, and specifications of other agencies, engineering societies, or industrial associations referred to in these Specifications. These refer to the latest edition, including amendments published and in effect at the date of the Invitation for Proposal, unless specifically referred to by edition, volume, or date. Unless the context otherwise requires, Reference Specifications also include all amendments published or adopted after the date of the Invitation for Proposal.
 - n. Subcontractor: A person, firm, or corporation, other than Contractor and employees thereof, who supplies labor, services or materials for a portion of the Work to be performed by Contractor under the Contract.
 - o. Ton: The short ton of 2,000 pounds.
 - p. Work: The services, materials, equipment, and other performance identified in these Specifications and other Contract Documents to be provided by Contractor.
- 2. Materials and Work: All Work shall comply with these Specifications. All materials used or supplied, and all equipment furnished, shall be new and unused, but this requirement shall not preclude the use of recycled materials in the manufacturing processes. All Work shall be done by qualified workers in a thorough and workmanlike manner that would pass without objection in both Contractor's trade and IPA's and IPSC's industry. Materials, equipment, workmanship, and other Work not definitely specified, but incidental to and necessary for the Work, shall conform to the best commercial practice for the type of Work in question and be of a quality that passes without objection in Contractor's trade and IPA's and IPSC's industry.
- 3. Nondiscrimination: The applicable provisions of Executive Order No. 11246 of September 24, 1965, and Bureau of Land Management regulations, and all other applicable governmental regulations pertaining to nondiscrimination in employment in the performance of contracts, are incorporated herein by reference, and made a part hereof as if they were fully set forth herein. During the performance of the Contract, Contractor shall not discriminate in its employment practices against any employee or applicant for employment because of the employee's or applicant's race, religion, national origin, ancestry, sex, age, or physical disability. All subcontracts awarded under or pursuant to the Contract shall contain a like nondiscrimination provision.
- 4. Governing Law; Venue: The Contract shall be governed by the substantive laws of the state of Utah, regardless of any rules on conflicts of laws or choice of law that would otherwise cause a court to apply the laws of any other state or jurisdiction. Any action,

DIVISION E1

GENERAL CONDITIONS

in law or in equity, concerning any alleged breach of or interpretation of the Contract, or concerning any tort in relation to the Contract or incidental to performance under the Contract, shall be filed only in the state or federal courts located in the state of Utah.

5. Patents and Intellectual Property: Contractor shall fully indemnify and, at the election of IPA, defend IPA, IPSC, and the Operating Agent against any and all liability, whatsoever, by reason of any alleged infringement of any intellectual property rights (including, but not limited to, patents, copyrights, trademarks, or trade secrets) on any article, process, method, or application used in any designs, plans, drawings, or specifications provided under the Contract, or by reason of Contractor's manner of performance under the Contract, or by reason of use by IPA, IPSC, or the Operating Agent of any article, process, or material specified by Contractor.

All drawings shall be delivered to and be the property of IPSC. IPSC shall be entitled to use the Drawings and the information contained therein for the construction, operation, maintenance, repair, alteration, improvement, and expansion of IPP facilities. Drawings anticipated for delivery to IPSC include: (a) General Arrangement Drawings showing equipment arrangement; (b) Field Installation Drawings; and (c) Instruction Manuals for supplied equipment.

6. Contractor's Address and Legal Service: The address given in the Proposal shall be considered the legal address of Contractor and shall be changed only by advance written notice to IPSC. Contractor shall supply an address to which certified mail can be delivered. The delivery of any written communication to Contractor personally, or delivery to such address, or the depositing in the United States Mail, registered or certified with postage prepaid addressed to Contractor at such address, shall constitute a legal service thereof.
7. Assignment of Contract Prohibited: Contractor shall not assign or otherwise attempt to dispose of the Contract, or any rights hereunder, or of any monies due or to become due hereunder, unless authorized by the prior written consent of the President and Chief Operations Officer. The Contract, and Contractor's rights hereunder (including rights of collection) are nonassignable without the President and Chief Operations Officer's prior written consent. No right or claim can be asserted against IPA, IPSC, or the Operating Agent, in law or equity, by any person, by reason of any assignment or disposition unless so authorized.

If Contractor, without such prior written consent, purports to assign or dispose of the Contract, or any right or interest hereunder, IPSC may at its option terminate the Contract. Such termination shall relieve and discharge IPA, IPSC, and the Operating Agent from any and all liability, duties, and obligations to Contractor, and to any assignee or transferee thereof.

8. Quality Assurance: IPSC has the right to subject any or all materials, services, equipment, or other Work furnished and delivered under the Contract to rigorous

DIVISION E1

GENERAL CONDITIONS

inspection and testing. (Unless otherwise specifically provided in the Contract with respect to specific materials, services, equipment, or other Work, IPSC has no duty to inspect, test, or specifically accept.) Before offering any material, services, equipment, or other Work for inspection, testing, delivery, or acceptance, Contractor shall eliminate all items or portions which are defective or do not meet the requirements of these Specifications. If any items or portions are found not to meet the requirements of these Specifications, the lot, or any faulty portion thereof, may be rejected. Only the Contract Administrator may accept any material, service, equipment, or other Work as complying with these Specifications on behalf of IPSC.

IPSC may inspect and reject materials, services, equipment, or other Work tendered or purchased under the Contract at any reasonable location IPSC may choose (including, but not limited to, points of origin, while in transit to IPSC, IPSC specified receiving points, IPSC storage sites, or any point of use or installation). Inspection can include any testing that IPSC deems necessary or convenient to determine compliance with these Specifications. The expense of any initial tests will be borne by IPSC. All expenses of subsequent or additional tests will be charged against Contractor when due to failure of first-offered materials, services, equipment, or other Work to comply with these Specifications.

The fact that the materials, services, equipment, or other Work have or have not been inspected, tested, or accepted by IPSC, whether voluntarily or as required by any specific provision in the Contract, shall not relieve Contractor of responsibility in case of later discovery of nonconformity, flaws, or defects, whether patent or latent.

9. Extra Work, Reduced Work, and Change Orders by IPSC: IPSC reserves the right at any time before final acceptance of the entire Work to order Contractor to furnish or perform extra Work, or to make changes altering, adding to, or deducting from the Work, without invalidating the Contract. Changes shall not be binding upon either IPSC or Contractor unless made in writing in accordance with this Article.

Changes will originate with the President and Chief Operations Officer who will transmit to Contractor a written request for a Proposal covering the requested change, setting forth the changed Work in detail, and including any required supplemental plans or specifications. Upon receipt of such request, Contractor shall promptly submit in writing to the President and Chief Operations Officer a Proposal offering to perform such change, a request for any required extension of time caused by such change, and an itemized statement of the cost or credit for the proposed change. Failure of Contractor to include a request for extension of time in the Proposal shall constitute conclusive evidence that such extra Work or revisions will entail no delay and that no extension of time will be required.

If Contractor's Proposal is accepted by IPSC, a written change order will be issued by the President and Chief Operations Officer stating that the extra Work or change is authorized and granting any required adjustments of the Contract price and of time of

DIVISION E1

GENERAL CONDITIONS

completion. If Contractor's Proposal is rejected by IPSC, then IPSC may order the additional or changed Work from other vendors.

Additional Work or changes pursuant to the change order shall be performed in accordance with the terms and conditions of these Specifications. No extra Work shall be performed or change made unless pursuant to such written change order, and no claim for an addition to the Contract price shall be valid unless so ordered.

Notwithstanding anything in the preceding paragraphs to this Article, IPSC may issue a written order reducing the Scope of Work without issuing a request for Proposal. Any such reduction in the Scope of Work shall be effective upon issuance. Reductions ordered by IPSC shall constitute partial terminations and shall reduce the price to be paid.

10. Changes at Request of Contractor: Changes may be made to facilitate the Work of Contractor. Such changes may only be made without additional cost to IPSC, without extension of time, and pursuant to written permission from the President and Chief Operations Officer. Permission for such changes shall be requested in writing by Contractor to the President and Chief Operations Officer.
11. Time is of the Essence and Extensions of Time: Time is of the essence to the Contract. Delivery and other performance of Work must be completed within the times and by the dates specified. Time for delivery or other performance of Work shall not be extended except as provided in this Article. Failure to deliver or otherwise perform Work within the times and by the dates specified shall constitute a default and be grounds for IPSC to immediately terminate the Contract.

If Contractor makes a timely written request in accordance with this Article, the time for delivery or other performance of Work will be extended by a period of time equivalent to any delay in the whole Work which is: (a) authorized in writing by the President and Chief Operations Officer, (b) caused solely by IPSC, or (c) due to unforeseeable causes (such as war, strikes, or natural disasters) and which delay is beyond the control and without the fault or negligence of Contractor and subcontractors.

Contractor shall promptly notify the President and Chief Operations Officer in writing at both the beginning and ending of any delay, of its cause, its effect on the whole Work, and the extension of time claimed. Failure of Contractor to provide such written notices and to show such facts shall constitute conclusive evidence that no excusable delay has occurred and that no extension of time is required.

The President and Chief Operations Officer will ascertain the facts and the extent of the delay and will extend the time for delivery when the findings of fact justify such an extension. The President and Chief Operations Officer's determination will be final and conclusive.

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IPSC will be responsible for granting extensions of time as herein provided, but will not otherwise be responsible in any manner or liable to any extent for damage directly or indirectly suffered by Contractor as a result of any delay.

12. Protests and Claims: If Contractor considers any demand of the President and Chief Operations Officer to be outside of the requirements of the Contract, or considers any amount of payment, or any record, ruling, or other act, omission, or determination by the President and Chief Operations Officer to be unreasonable, Contractor shall promptly deliver to the President and Chief Operations Officer a written statement of the protest and of the amount of compensation or nature of accommodation, if any, claimed.

Upon written request by the President and Chief Operations Officer, Contractor shall provide access to all records containing any evidence relating to the protest or claim.

Upon review of the protest, claim, and evidence, the President and Chief Operations Officer will promptly advise Contractor in writing of the final decision which will be binding on all parties.

The requirements of this Article shall be in addition to, and shall not be construed as waiving claims provisions of the Statutes of the state of Utah. Contractor is deemed to have waived and does waive all claims for extensions of time and for compensation in addition to the Contract price except for protests and claims made and determined in accordance with this Article.

13. Limitation of Liability: Responsible Party: It is understood and agreed that IPA shall be the sole party or person liable to Contractor for payments under or pursuant to the Contract, and for any breaches, defaults, or for any torts in the performance of or in relation to the Contract by IPA, IPSC, or the Operating Agent, or any officers, agents, or employees thereof. Contractor hereby expressly covenants and agrees that no suit shall be brought by Contractor against IPSC, or the Operating Agent, or their, or IPA's officers, agents, or employees, or any of the purchasers of power from IPA, but that all rights or remedies that Contractor may have or that may arise under or in relation to the Contract shall be asserted by Contractor solely against IPA. Without limiting the foregoing provisions of this Article, Contractor shall have no right against any of the foregoing (including IPA) to assert or recover, in contract or in tort, damages or losses in the nature of consequential damages, incidental damages, or punitive or exemplary damages. In no event shall Contractor be liable, whether in contract, tort (including negligence), warranty, strict liability, or any other legal theory, for any indirect or consequential damages, such as, but not limited to: cost of capital; loss of anticipated profits or revenue; loss of use or increased expense of using equipment or plant; loss of power or production; cost of purchased or replacement power or production; or claims of customers for loss of power or production.
14. Independent Contractor: Contractor shall perform all Work as an independent contractor in the pursuit of its independent calling. Contractor is not an employee,

DIVISION E1

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agent, joint venturer, partner, or other representative of IPA, IPSC, or the Operating Agent and shall be under the control of IPSC only to provide the Work requested and not as to the means or manner by which the Work is to be accomplished. Contractor has no authority to act for, bind, or legally commit IPA, IPSC, or the Operating Agent in any way.

15. Drug Policy: Contractor shall submit a current copy of its drug policy for review. IPP facilities are a drug free and zero tolerance workplace. Contractor's employees and its subcontractors' employees, who are to perform Work or otherwise be at the IPP facilities, shall participate in a drug testing program prior to arrival, and at any additional time(s) during the Contract as IPSC may request.
16. Security and Safety Compliance: Contractor and its employees, agents, representatives, and/or subcontractors, while performing Work on IPP premises, or who are otherwise on IPP premises, shall fully comply with all security, fire prevention, and safety rules and procedures in force at IPP. IPSC has the right (but not duty) to make periodic and random inspections of the persons, and of their respective property, upon entering, at any time while on, and when departing any IPP facility. Such persons subject to inspection include Contractor, any subcontractor, and their respective employees, agents, and representatives. Property subject to inspection includes, but is not limited to, vehicles, clothing, toolboxes, lunch boxes, any other carrying case, tools or equipment, and anything contained therein. If violations are noted, the violations will be reported to Contractor's on-site supervisor and the Contract Administrator for appropriate action.

All Contractor's employees will be given security identification badges by IPSC and those badges shall be displayed each day to allow admittance on IPP premises. Contractor's employees who do not have security identification badges in their possession, will not be allowed on site unless signed in by the Contract Administrator. All security identification badges shall be returned to the Security Contractor when the employee terminates their work at this site. All Contractor's vehicles will also receive parking stickers from the Security Contractor allowing entrance on IPP premises. Temporary badges and parking stickers are available for intermittent Contractor employees and vehicles.

Contractor shall have access on IPP premises between the hours of 7:00 am to 7:00 pm Monday through Friday. Access may be allowed on weekends or at other times with the approval of the Contract Administrator.

Contractor will be directed to specified areas for parking vehicles and equipment by the Contract Administrator. Certain areas of IPP premises are restricted to IPSC vehicles only. Exceptions to the parking restriction will be made on an as needed basis through Contractor's respective Contract Administrator. Contractor shall make its employees, agents, representatives, and/or subcontractors aware of all areas that are subject to restricted parking.

DIVISION E1

GENERAL CONDITIONS

Contractor agrees, warrants, and represents that: (a) it is familiar with the risks of injury associated with the Work and otherwise being on IPP premises, (b) has reviewed the Work to be performed, (c) has inspected the IPP Work site with an IPSC representative, and (d) has determined that no unusual or peculiar risk of harm exists with regard to the Work to be performed on IPP premises. Contractor further agrees that it shall, at all times, provide on IPP premises, a competent supervisor(s) familiar with IPSC's and the industry's safety standards to ensure compliance with all federal, state, and local regulations pertaining to safety (including, but not limited to, Federal and State OSHA, as said regulations relate to the Work to be performed under the Contract). Although IPSC assumes no responsibility to oversee or supervise the Work, IPSC reserves the right to review safety programs and practices and to make recommendations to Contractor. No such review or recommendation by IPSC shall impose any liability or responsibility on IPSC, or relieve Contractor from providing a safe working environment and complying with all legal requirements.

Contractor shall comply with IPSC's safety and equipment requirements prior to starting the Work. Worker protective clothing, which includes, but is not limited to, hardhats, safety glasses, safety shoes, gloves, respirators, earplugs, safety harnesses, and face shields shall be provided by Contractor.

Prior to starting the Work, all of Contractor's personnel shall attend a safety orientation taught by a representative of IPSC. At Contractor's option and subject to IPSC approval, a supervisor of Contractor may attend the orientation taught by IPSC, and then present the orientation to the remainder of Contractor's personnel. In that case, a roll shall be provided to IPSC which lists each person who received the orientation and the date it was received.

17. Nonexclusive: This is a nonexclusive Contract. IPSC reserves the right to obtain services, materials, equipment, or other Work from other vendors or suppliers.

PART E - DIVISION E2

ADDITIONAL GENERAL CONDITIONS

1. **Guarantee:** Contractor guarantees and warrants for a minimum period of one (1) year after delivery, and for such longer period as may be specified by the applicable statute of limitations, that all materials, services, equipment, and other Work furnished are free from defects and otherwise conform to the terms of the Contract, including, but not limited to, the Article entitled "Materials and Work" in Part E, Division E1, General Conditions.

Contractor shall repair or replace, as IPSC may direct, all defective materials, services, equipment, or other Work. Such repair or replacement shall be F.O.B. at such destination as IPSC may direct (contract delivery point, point of installation, point of consumption, etc.). IPSC's right to demand repair or replacement is in addition to any other remedies that may be available for breach of the foregoing guarantee and warranty.

Contractor shall, for the protection and benefit of IPA, IPSC, and LADWP, obtain guarantees conforming to the foregoing two (2) paragraphs from each of its vendors and subcontractors with respect to their materials, services, equipment, or other portion of the Work. Such guarantees from vendors and subcontractors shall be in addition to, and not in lieu of, Contractor's own guarantees.

2. **Payment:** Payment will be made within thirty (30) calendar days after delivery and receipt of the invoice in the form directed by IPSC.
3. **Work Slips and Invoices:** Contractor shall furnish Work slips suitable for recording (e.g., - the weight of concentrated sulfuric acid in tons), at the time of each delivery. IPSC may direct the form of Work slips to be used. Accuracy of completed Work slips shall be subject to verification by IPSC, who will retain the original copies.

At the expiration of each calendar month during which material or other Work is delivered, Contractor shall render an invoice and copies of signed Work slips (e.g., - the total weight of acid) delivered during said month.

Invoices shall be submitted in duplicate to Accounts Payable, Intermountain Power Service Corporation, 850 West Brush Wellman Road, Delta, Utah 84624-9546. All letters pertaining to invoices shall be addressed to the foregoing address.

IPSC may direct the form of invoice to be used. All invoices shall show the Contract number, release number, or other identification of each delivery covered by the invoice. In all cases, the amount of the applicable sales tax or use tax shall be separately stated on the invoice.

4. **Regulations, Permits, Licenses, and Warrants:** Contractor shall comply with all applicable federal, state, and local regulations including, but not limited to, Federal and State OSHA, as said regulations relate to the Contract, Contractor's performance, or

DIVISION E2

ADDITIONAL GENERAL CONDITIONS

Contractor's trade. In addition, Contractor shall ensure that all permits, licenses, and warrants relating to the Contract, Contractor's performance, and Contractor's trade be acquired.

5. Letters to IPSC: All inquiries relating to these Specifications prior to award of Contract shall be addressed to the Buyer.

After award of Contract, all letters pertaining to performance of the Contract (other than invoice) shall be addressed as follows:

Mr. George W. Cross
President and Chief Operations Officer
Intermountain Power Service Corporation
850 West Brush Wellman Road
Delta, UT 84624-9546

Attention: James Nelson
Contract Administrator

Regarding **Contract No: 04-45606**

PART F - DIVISION F1

DETAILED SPECIFICATIONS - SPECIAL CONDITIONS

1. **General:** Under the terms of the Contract, Contractor shall furnish and deliver **Unit 2 Low NOx Burners** ordered by IPSC beginning with date stated in the first introductory paragraph of the Contract Agreement (hereinafter called the Contractual Period).
2. **Quantity:** IPSC agrees to purchase **forty-eight (48) Low NOx Burners and Associated Flame Detection Systems** during the Contractual Period.
3. **Delivery:** Contractor shall make deliveries only upon receipt of releases issued by the Buyer or a duly authorized representative. IPSC reserves the right to specify in said releases the amounts and dates of deliveries at the locations described in the Proposal Schedule.

Notwithstanding the above, IPSC agrees to accept early delivery of burners if ABT's shop is ready to ship. Burners will be stored indoors at the site and unloaded by IPSC.

4. **Printed Documents:** All printed documents, including drawings and instruction books, if applicable, shall be in the English language. All units of measurement shall be in the English foot-pound-second system.
5. **Indemnity Clause:** Contractor undertakes and agrees to indemnify, hold harmless, and at the option of the IPA, defend IPA, IPSC, LADWP, and any and all of their boards, officers, agents, representatives, employees, assigns, and successors in interest from and against any and all suits and causes of action, claims, charges, costs, damages, demands, expenses (including, but not limited to, reasonable attorneys' fees and cost of litigation), judgments, civil fines and penalties, liabilities or losses of any kind or nature, including, but not limited to, violations of regulatory law, breach of contract, death, bodily injury or personal injury to any person, including Contractor's employees and agents, or damage or destruction to any property of either party hereto, or of third persons, arising in any manner by reason of or incident to the performance of the Contract on the part of Contractor, or Contractor's officers, agents, employees, or subcontractors of any tier, except as may be caused by the sole negligence of IPA, IPSC, LADWP, or their boards, officers, agents, representatives, or employees.
6. **Insurance Requirements:** Prior to the start of the Work, but not later than thirty (30) calendar days after date of award of Contract, Contractor shall furnish IPSC evidence of coverage from insurers acceptable to IPSC and in a form acceptable to IPSC Insurance Analyst. Such insurance shall be maintained by Contractor and at Contractor's sole cost and expense.

Such insurance shall not limit or qualify the liabilities and obligations of Contractor assumed under the Contract. IPA, IPSC, or LADWP shall not, by reason of any of their inclusion under these policies or otherwise, incur liability to the insurance carrier for payment of the premium for these policies.

DIVISION F1

SPECIAL CONDITIONS

Any insurance carried by IPA, IPSC, or LADWP which may be applicable is and shall be deemed excess insurance, and Contractor's insurance is and shall be primary for all purposes despite any provision in Contractor's policies to the contrary.

Should any portion of the required insurance be on a "Claims Made" policy, Contractor shall, prior to the policy expiration date following completion of the Work, provide evidence that the "Claims Made" policy has been renewed or replaced with the same limits and terms and conditions of the expiring policy at least for the Contract under which the Work was performed.

Note: General ABT Clarification on Insurance: Should ABT's current limits be unacceptable to IPSC and ABT must raise the insurance limits for the Contract, the difference in ABT's premiums would be added and billed to IPSC at cost.

- a. Workers' Compensation/Employer's Liability: Workers' Compensation Insurance covering all of Contractor's employees in accordance with the laws of all states in which the Work is to be performed and including Employer's Liability Insurance, and as appropriate, Broad Form All States Endorsement. The limit for Employer's Liability coverage shall be not less than \$1 million each accident and shall be a separate policy if not included with Workers' Compensation coverage. Evidence of such insurance shall be a certificate to the policy providing for a thirty (30) calendar days prior written notice of cancellation or nonrenewal of a continuous policy to IPSC, by receipted delivery.
- b. Commercial General Liability: Commercial General Liability with Blanket Contractual Liability, Products and Completed Operations, Broad Form Property Damage, Premises and Operations, Independent Contractors, and Personal Injury coverages included. Such insurance shall provide coverage for total limits actually arranged by Contractor, but not less than \$2 million Combined Single Limit. Should the policy have an aggregate limit, such aggregate limits should not be less than \$8 million. Umbrella or Excess Liability coverages may be used to supplement primary coverages to meet the required limits. Evidence of such coverages shall be on IPSC's Additional Insured Endorsement Form, on an endorsement of the policy acceptable to IPSC, or a complete copy of the coverage and exclusions portions of the policy. The evidence of coverage should provide for the following:
 - (1) To include IPA, IPSC, LADWP, and their officers, agents, and employees as additional insured with the Named Insured for the activities and operations under and in connection with the Contract.
 - (2) That the insurance is primary and not contributing with any other insurance maintained by IPA, IPSC, or LADWP.

DIVISION F1

SPECIAL CONDITIONS

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- (3) That the policy shall not be subject to cancellation, change in coverage, reduction of limits or nonrenewal of a continuous policy, except after written notice to IPSC, by receipted delivery, no less than thirty (30) calendar days prior to the effective date thereof.
- (4) A description of the coverages included under the policy.
- c. Commercial Automobile Liability: Commercial Automobile Liability covering the use of owned, nonowned, hired, and leased vehicles for total limits actually arranged by Contractor, but not less than \$1 million Combined Single Limit. Such insurance shall include Contractual Liability coverage. The method of providing evidence of insurance and requirements for additional insureds, primary insurance, notice of cancellation, and Severability-of-Interest shall be the same revised requirements in the Commercial General Liability Section of terms and conditions.
- d. Professional Liability: Contractor shall provide Professional Liability Insurance covering Contractor's liability arising from errors and omissions made directly or indirectly during the execution and performance of the Contract and shall provide coverage of \$2.5 million Combined Single Limit. Such insurance shall be an endorsement to the Commercial General Liability Policy without separate aggregate.
- The policy shall not be subject to cancellation, change in coverage, reduction of limits, or nonrenewal of a continuous policy, except after written notice to IPSC, by receipted delivery, not less than thirty (30) calendar days prior to the effective date thereof.
- e. Other Conditions: Contractor shall be responsible for all subcontractors' compliance with these revised insurance requirements. The foregoing remedies in subsection (1) shall be available to IPSC against Contractor for any failure by any subcontractor to maintain and provide the required insurance.
7. Transportation: All shipments of hazardous materials under the Contract or in connection herewith shall be handled in accordance with current U.S. Department of Transportation regulations and all other applicable federal, state, and local laws and regulations.
8. Material Safety Data Sheets: Contractor shall furnish IPSC with a Material Safety Data Sheet (MSDS) for all hazardous materials furnished under the Contract, used, stored, or transported on or near IPP premises in connection with the Contract. The MSDS shall be furnished to IPSC on, or prior to, the date of the first delivery, use, storage, or transportation of the materials or equipment. If these Specifications require that Contractor furnish instruction books, the MSDS shall also be included in such books.

DIVISION F1

SPECIAL CONDITIONS

9. Contract Termination:

- a. For Convenience or Security: IPSC reserves the right, by giving twenty (20) calendar days prior written notice (or such longer notice as IPSC may select) to Contractor, to terminate the whole or any part of the Contract at IPSC's convenience, whether or not Contractor is in default. IPSC also reserves the right to terminate the Contract, effective immediately upon notice, for purposes of security or safety of IPP facilities, persons who work at IPP facilities, or the public. In the event of termination for convenience, security, or safety, IPA will pay Contractor reasonable and proper direct costs of termination (if, however, Contractor's Proposal includes cancellation charges, payment for termination costs shall not exceed the cancellation charges set forth therein). Contractor shall, after consultation with IPSC, take all reasonable steps to minimize the costs related to termination. Contractor shall provide IPSC with an accounting of costs claimed, including adequate supporting information and documentation and IPSC may, at its expense, audit the claimed costs and supporting information and documentation.
- b. For Breach: IPSC may terminate the whole or any part of the Contract effective immediately upon notice, in the event Contractor is in material default, and without right on the part of Contractor to claim any termination costs. This right to terminate is in addition to, and not in lieu of, any other remedy provided in the Contract or otherwise provided by law or equity.
- c. Limitation of Liability: In no event shall termination of this Contract, or any portion thereof, whether for convenience, security, safety, breach, or otherwise, constitute the basis for or result in any claim by Contractor for consequential or incidental damages (including loss of anticipated profits or other economic damages) or punitive damages, and Contractor hereby releases IPA, IPSC, and LADWP, and their officers, directors, employees, agents, and representatives, from any and all such claims or liability.

10. Suspension of Work: IPSC reserves the right to suspend and reinstate execution of the whole or any part of the Contract and the Work without invalidating the provisions of the Contract. In the event the Work is suspended, Contractor will be reimbursed for actual direct unavoidable costs that it reasonably incurs as a result of the suspension. Claims for such cost reimbursement shall be submitted by invoice. Contractor shall use all reasonable means to minimize such costs, and shall allow IPSC to audit costs claimed. Contractor shall, upon request by IPSC, provide a projection of costs it anticipates to incur during any suspension, or continuation of suspension, contemplated by IPSC. In no event shall suspension constitute the basis for, or result in, any claim for consequential or incidental damages (including loss of anticipated profits or other economic damages) or punitive damages, and Contractor hereby releases IPA, IPSC, and LADWP, and their officers, directors, employees, agents, and representatives, from any and all such claims or liability.

DIVISION F1

SPECIAL CONDITIONS

11. No Waiver: No breach, noncompliance, or other failure to perform (collectively "breach") by Contractor, or any subcontractor, or of any Work shall be deemed waived unless expressly waived in writing by the President and Chief Operations Officer. No waiver by IPSC of any one breach shall be deemed to waive any other prior, concurrent, or subsequent breach. No exercise, or failure to exercise, or delay in exercising any particular remedy by IPSC shall be deemed a waiver or preclude IPSC from subsequently invoking that remedy for that breach or any other breach. All remedies granted to IPSC in the Contract, or by law or equity, are cumulative and may be exercised in any combination or order.

PART F - DIVISION F2

DETAILED SPECIFICATIONS - DETAILED REQUIREMENTS

1. **General:** The Scope of Work for the Contract includes the design, procurement, fabrication, delivery, installation, and start-up of burners at IGS Unit 1 and Unit 2. The burners in Unit 2 are to be replaced during the Spring 2004 Outage. The outage is scheduled to begin February 28, 2004. All replacement burner materials must be on-site at IGS no later than February 13, 2004.
2. **Existing Equipment:** The existing burners are B&W Dual Register, Phase 5 Pulverized Coal Burners. The existing Bailey Control System Flamon® Type UM and UW flame scanning hardware shall be replaced with the new burners as a part of these Specifications. The existing lighters are B&W CFA Oil Ignitors normally burning No. 2 diesel oil. The CFA lighters will continue to be used with the new burners and scanning system. The burners, scanners, lighters and fuel specification sheets and outline drawings are included in Attachment 1, Scanner, Lighter and Fuel Specifications, and Outline Drawings.

Existing combustion zone stoichiometry is approximately 1.15. Nominal windbox pressures run in the range of 1.0 to 1.5 in. w.g. Burner windboxes are compartmentalized and fed by one (1) damper at each end of the compartment, operating in parallel. The width of the boiler (i.e. length of a compartment) is approximately 80 feet.

Note: See attached layouts of the existing windbox and burners. Pulverized coal is provided by one (1) of eight (8) MPS - 89G mills at a design rate of up to 68 tph at a fineness of 70 percent through 200 mesh.

3. **Burner Scope:** Contractor shall provide forty-eight (48) Low NOx Burners incorporating latest technology combustion design, including all associated hardware for installation, special tools, and technical direction during installation and startup. The burners shall operate compatibly and effectively with a newly installed overfire air system, which is to be capable of utilizing up to 20 percent of the total design combustion air flow.
4. **Flame Detection System Scope:** The bidder shall provide a complete offering for replacement of the existing Bailey Controls Flamon® Scanning System. Bids for both single and dual probe systems will be accepted and evaluated. Award will be based heavily upon evaluation of the experience list provided with each bid. Bidders may offer alternate bids for all flame scanning systems with which they have had experience.

Flame scanner systems shall include all hardware required for complete installation of the system, including wiring, conduit, and associated hardware for cable routing. Wiring schematics, wiring and installation specifications, and junction boxes with pre-installed, termination hardware shall be supplied by Contractor.

DIVISION F2

DETAILED SPECIFICATIONS - DETAILED REQUIREMENTS

5. Burner Design: Burners provided for use at IGS shall adhere to the following provisions:
- a. Within the design phase of the Work, Contractor shall review all operational impacts on associated equipment and systems such as fans, pulverizers, dampers, etc. Any concerns regarding operating limitations or increase power demands noted within the modeling/design phase shall immediately be brought to the attention of the IPSC Contract Administrator.
 - b. Burner design and fabrication methodologies shall emphasize speed and ease of installation. The burner nozzles shall interface directly with the existing burner line flanges.
 - c. Burners shall be provided with combustion air flow sensors providing individual burner air flow indication in each annulus on each burner. Pre-wired panels, signal transducers, and displays shall be provided for displaying flow for each burner locally. Terminals shall be designed and provided within each panel for routing signals remotely. IPSC will have the responsibility to route the flow signals from the local panels to the control room if desired.
 - d. Burners shall provide for local manual air balance control, both between registers within each burner and between burners within a row. The registers shall remain operable under all operating conditions for at least the durations noted in Division C2, Burner and Scanner Performance Guarantees.
 - e. Temperature sensors installed at two (2) locations on each burner shall be provided and routed to a local cold-junction box at each burner level. The sensors shall be located in accordance with the direction of Contractor to identify and track the hottest temperatures occurring at the burner in both the in-service and out-of-service condition. Individual burner temperatures shall be provided at the local cold-junction boxes. Termination space shall be provided within the local cold-junction boxes for continuation of the circuits remotely for indication, monitoring, and alarm within the plant data acquisition system by IPSC as desired.
 - f. The burner assemblies shall be fabricated of quality material sufficient to withstand the significant thermal stresses occurring within the windbox as a result of both radiant and convective heating. Any deformation causing malfunction of register assemblies or misdirection of flow through the burner within the period of guaranteed operability shall be repaired at the earliest possible opportunity and charged to Contractor.
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DIVISION F2

DETAILED SPECIFICATIONS - DETAILED REQUIREMENTS

- g. Experience-based and verified wear-life shall be quoted within the bid for all burner components. No component shall last less than four (4) years before requiring rebuild, restoration, or replacement.
 - h. Burners shall be designed to operate continuously by IPSC without detrimental effects on boiler performance and steam side flexibility, within the ranges of carbon monoxide, unburned carbon, nitrogen oxides, and excess air specified in Division C2, Burner and Scanner Performance Guarantees.
 - i. Burners shall be designed for installation within the existing burner openings without pressure part modifications, unless clearly noted otherwise within the Proposal.
 - j. Burners shall be designed such that stable flame ignition occurs at the nozzle discharge.
 - k. Burners shall be designed for continuous operation with preheated air at an air heater outlet temperature of 750°F. This does not account for radiant and other heating sources.
 - l. Burners shall be equipped with an aspirated observation/viewing port to permit inspection of the flame. If necessary for flame diagnostics and adjustment, multiple observation doors shall be furnished. Doors shall be designed to permit observation during any load condition. Contractor (ABT) shall include one (1) port per burner assembly with observation glass to view flame. Each port will be equipped with purge air connection and ball valve should the need arise to purge the view pipe.
 - m. Burners shall include, and shall be provided with, new seal/cooling air piping and fittings, including a ball valve, from the burner connection to the header piping.
 - n. Air register operating mechanisms, joints, seals, slides, and linkages shall not be subject to binding from poor design, differential expansion, or from the accumulation of fly ash and shall remain operational without internal lubrication.
 - o. Air flow volume adjustment within each zone of the burner shall not be controlled with the same device controlling air swirl or spin within any air zone.
 - p. Burners shall be capable of stable operation continuously from 45 percent to 115 percent of rated BTU output of the burner without supplemental fuels.
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6. Flame Detection System Design: The flame scanning system shall, as a minimum, include the following provisions:

DIVISION F2

DETAILED SPECIFICATIONS - DETAILED REQUIREMENTS

- a. Flame scanner ports shall be sighted so flame scanner can readily and effectively discriminate between adjacent or opposing burners and its own burner flame in all operating modes and at all loads.
 - b. Flame detection system shall be provided with protective devices permitting the removal of the system from service with the boiler in operation.
 - c. Flame scanner ports shall include scanner cooling air and seal air provisions, where required. If not provided, or if shown to be adequate in operation, Contractor shall provide and install such hardware as required to address both heating and reliability issues.
 - d. Flame detection system shall be designed with IGS existing support systems in mind. Requirements for reliable operation of the scanning system (cooling air, power, etc.), shall be clearly identified within the bidding documents.
 - e. Flame detection system electronics shall be designed for operation in severe industrial environments. Contamination from dust, flyash, and ambient temperatures in excess of 120°F occur on a regular basis throughout the boiler structure.
 - f. Flame detection system and controllers shall be capable of communication in all versions of Modbus RTU communications protocol.
 - g. Flame detection system shall provide local indication of flame detected at each burner level. Control outputs to the burner management system shall be dry contacts.
7. **Technical Support:** Contractor shall consult with IPSC throughout the design development process, allowing IPSC to participate in the selection process of preferential items or common industrial equipment required within the design. Bidders shall include the names and direct dial telephone numbers of the lead project design engineers in each area of expertise in the bidding documents. Where possible and applicable, the name and telephone number of the assigned site construction coordinator shall also be provided. All technical advisory personnel assigned to support IPSC with this Project shall have a minimum of ten (10) years experience in the issues to be addressed.

During construction and startup, Contractor shall provide full-service technical support throughout the outage in all areas of expertise required for successful installation, startup, and tuning of the boiler. This shall occur regardless of whether Contractor is also selected to install the burner and flame detection systems. This shall include technical support in proper positioning, tuning, operation, and control of the burner registers, flame detection system, and affected boiler equipment.

DIVISION F2

DETAILED SPECIFICATIONS - DETAILED REQUIREMENTS

Bidders shall include a minimum of two (2) weeks of support following startup to ensure stable operation of both the burner and flame detection systems. In addition, bidders shall include at least one (1) additional week (including travel, room, and boarding expenses) at IPP job site for two (2) people to witness and participate in the full-load operational testing. Should extended problems arise as a direct result of the Contract modifications, Contractor shall provide whatever level of support is required to address the problems, in a timely manner.

8. Installation: A primary focus of the Contract shall be the optimization of the Work to occur during unit off-line hours. Detailed planning of the Scope of Work for the Contract shall include a level of redundancy in equipment and manpower to ensure that guaranteed schedules are met.
- a. Bidders may submit proposals for installation of the burners and scanner systems as capabilities dictate. Where bidder elects to provide an installation bid, all equipment and materials of installation shall be provided by bidder. Where bidder elects not to bid the installation of these systems all equipment and materials of installation shall be provided by Contractor with the exception of wiring, conduit, and associated hardware for cable routing. Wiring schematics, wiring and installation specifications, burner flow instrumentation, local display/junction boxes, burner temperature display, and cold-junction boxes shall be supplied by Contractor with pre-installed termination hardware as defined in Division F2, Article 5, Burner Design.
 - b. Contractor shall be responsible for any modifications and/or damage to or around the burner openings or windbox associated with the Work. This includes, but is not limited to, refractory, seal plates, and waterwall tubing.
 - c. Contractor shall be responsible for design and installation of any modifications required for interface with the existing coal pipes. This includes modifications to routing, size, and connection to the new burners.
 - d. Contractor shall be responsible for design and installation of any additions or modifications to windboxes, windbox supports, burner supports, waterwall tubing, buckstay system, etc., or any other existing system or piece of equipment required for proper and successful operation of the new burners and/or flame detection systems.
 - e. Contractor shall be responsible for connecting new equipment to IPSC existing facilities, to include furnishing and installing connections to plant seal air or plant instrument air (including instrument shutoff valves for each device) where required.

DIVISION F2

DETAILED SPECIFICATIONS - DETAILED REQUIREMENTS

- f. Contractor shall be responsible to maintain Work areas in an organized and safe manner throughout the execution of the installation plan. IPSC shall retain the right to assess and require correction of any areas or situations it deems as impacting ongoing operations and maintenance. Waste material produced during a shift shall be disposed of by the end of the following shift.

At the conclusion of each outage, Contractor shall ensure that all Work areas associated with the Contract are restored, replaced, and/or cleaned in a manner similar in appearance to that found prior to the outage.

- g. Contractor shall provide and install replacement insulation anchors, insulation, lagging, and all other materials required for complete restoration of any and all boiler external surface removed or disturbed during or resulting from Contract Work. Contractor shall replace or install insulating materials of a quality meeting or exceeding the insulation system currently in use on the respective boiler and system components.